In the Drawing:

Please replace FIGURE 8 with an attached copy of new FIGURE 8.

In the Claims:

Please add the following new claims:

14. An optical coupler comprising:

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at least one input waveguide, a coupling region optically connected to said input waveguide; and

a plurality of output waveguides each optically connected to said coupling region, wherein said coupling region further comprises a plurality of coupled waveguides, at least some section of said coupled waveguides having a width that is less than a predetermined critical width at a predetermined wavelength at which said optical coupler is designed to operate, said coupled waveguides over at least another part of their lengths diverging with respect to each other in the propagation direction of electromagnetic radiation launched in the said input waveguide.

15. The optical coupler according to any one of claim 14, wherein centre lines of at least some of the gaps between the waveguides in a coupling region follow the lines of a Gaussian field in accordance with equations E1 as follows:

$$w(z) = w_k\sqrt{1+(\alpha z)^2} \quad ; \quad \alpha = \frac{(\lambda / n_{eff})}{\pi w_o^2} \quad ; \quad R = z\left(1+\left(\frac{1}{\alpha z}\right)^2\right)$$

where z is the longitudinal propagation position; w(z) is the z-dependent lateral position of the central line of the k^{th} gap; w_k is the position of the center of the k^{th} gap at z=0; w_o is

the beam waist at z=0; λ is the wavelength in vacuum, n_{eff} is the effective index and R is the radius of curvature of the phase front.

16. The optical coupler according to any one of claim 15, wherein the equations E1 include a linearised version and other mathematical approximation of the equations E1.

17. The optical coupler according to any one of claim 14, wherein the centre lines of a gap between the waveguides in the coupling region follow the lines of a field in accordance with equations E2 as follows:

$$w(z) = \begin{cases} w_k & , \quad \text{for } z < z_k \\ w_k\sqrt{1+\left[\alpha\left(z - z_k\right)\right]^2} & , \quad \text{for } z <= z_k \end{cases} \quad ; \quad \alpha = \frac{\left(\lambda / n_{eff}\right)}{\pi w_o^{\,2}}$$

where z is the longitudinal propagation position; w(z) is the z-dependent lateral position of the central line of the k^{th} gap; w_k is the position of the centre of the k^{th} gap at z=0; w_o is the beam waist at z=0; λ is the wavelength in vacuum, n_{eff} is the effective index and R is the radius of curvature of the phase front.

18. The optical coupler according to any one of claim 17, wherein the equations E2 include a linearised version and other mathematical approximation of the equations E2.

19. An optical coupler comprising:

at least one input waveguide, a coupling region optically connected to said input waveguide; and

a plurality of output waveguides each optically connected to said coupling region, wherein said coupling region further comprises a plurality of coupled waveguides, at least some section of said coupled waveguides having a width that is less than a predetermined critical width at a predetermined wavelength at which said optical coupler is designed to operate.

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20. The optical coupler according to any one of claim 19, wherein said coupled waveguides over at least another part of their lengths diverging with respect to each other in the propagation direction of electromagnetic radiation launched in the said input waveguide.

21. The optical coupler according to any one of claim 20, wherein centre lines of at least some of the gaps between the waveguides in a coupling region follow the lines of a Gaussian field in accordance with equations E1 as follows:

$$w(z) = w_k\sqrt{1+(\alpha z)^2} \quad ; \quad \alpha = \frac{(\lambda / n_{eff})}{\pi w_o^{\,2}} \quad ; \quad R = z\left(1+\left(\frac{1}{\alpha z}\right)^2\right)$$

where z is the longitudinal propagation position; w(z) is the z-dependent lateral position of the central line of the k^{th} gap; w_k is the position of the center of the k^{th} gap at z=0; w_o is the beam waist at z=0; λ is the wavelength in vacuum, n_{eff} is the effective index and R is the radius of curvature of the phase front.

22. The optical coupler according to any one of claim 21, wherein the equations E1 include a linearised version and other mathematical approximation of the equations E1.

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23. The optical coupler according to any one of claim 20, wherein the centre lines of a gap between the waveguides in the coupling region follow the lines of a field in accordance with equations E2 as follows:

$$w(z) = \begin{cases} w_k & , \quad \text{for } z < z_k \\ w_k \sqrt{1 + [\alpha(z - z_k)]^2} & , \quad \text{for } z <= z_k \end{cases} \quad ; \quad \alpha = \frac{(\lambda / n_{eff})}{\pi w_o^{\ 2}}$$

where z is the longitudinal propagation position; w(z) is the z-dependent lateral position of the central line of the k^{th} gap; w_k is the position of the centre of the k^{th} gap at z=0; w_o is the beam waist at z=0; λ is the wavelength in vacuum, n_{eff} is the effective index and R is the radius of curvature of the phase front.

24. The optical coupler according to any one of claim 23, wherein the equations E2 include a linearised version and other mathematical approximation of the equations E2.

REMARKS

Please note the newly added claims have been supported by the original disclosures of the current application and do not add any new matter. The subject matter